Customer No.: 31561
Docket No.: 22778-US-PA
Application No.: 10/688,625

AMENDMENT

To the Claims:

1. (currently amended) A light emitting device comprising:

a light-generating unit for generating a primary light in a first wavelength range;

a wavelength-converting member connected to said light-generating unit for converting a portion of said primary light into a secondary light in a second wavelength range wherein said primary light in wavelength is shorter than said secondary light; and

at least an omnidirectional reflector of an omnidirectional photonic crystal connected to said wavelength-converting member for receiving said secondary light and the remainder of said primary light which was not converted by said wavelength-converting member;

wherein said reflector includes a dielectric structure having a plurality of dielectric units that are formed into a stack with a spatially periodic variation in dielectric constant, each of the dielectric units including at least three dielectric layers which are different from each other in reflective index and layer thickness in such as manner that said reflector has a transmittance characteristic that permits transmission of said secondary light therethrough, and a reflectance characteristic that substantially permits omnidirectional total reflection of the remainder of said primary light back to said wavelength-converting member.

2-3. (cancelled)

4. (previously presented) The light emitting device of claim 1, wherein said dielectric layers includes first, second and third dielectric layers, said second dielectric layer being sandwiched between said first and third dielectric layers and having a refractive index less than those of said first and third dielectric layers, said third dielectric layer having a refractive index less than that of said first dielectric layer.

5. (previously presented) The light emitting device of claim 1, wherein said light-generating unit is inlaid at one side of said wavelength-converting member, said reflector being disposed at an opposite side of said wavelength-converting member that is opposite to said one side of said wavelength-converting member.

6. (original) The light emitting device of claim 5, further comprising a second omnidirectional reflector, and first and second glass substrates that sandwich said light-generating unit and said wavelength-converting member therebetween, said wavelength-converting member having opposite upper and lower surfaces, said light-generating unit including an one or two dimensional arrays of light-generating elements that are inlaid in said lower surface of said wavelength-converting member, said second glass substrate being formed on said lower surface of said wavelength-converting member and covering said light-generating unit, said first glass substrate being formed on said upper surface of said wavelength-converting member, said first and second reflectors

being respectively formed on said first and second glass substrates.

7. (original) The light emitting device of claim 6, wherein said second reflector includes at least one dielectric unit that has at least two dielectric layers which are different from each other in refractive index and layer thickness.

8. (original) The light emitting device of claim 4, wherein said first dielectric layer is made from TiO_2, said second dielectric layer being made from SiO_2, said third dielectric layer being made from Ta_2O_5.

9. (original) The light emitting device of claim 6, wherein each of said light-generating elements is in the form of a light emitting diode that emits said primary light with a wavelength ranging from 350 to 470 nm.

10. (original) The light emitting device of claim 9, wherein said wavelength-converting member includes a transparent resin matrix with a fluorescent material dispersed therein so as to convert said primary light into said secondary light with a wavelength ranging from 400 to 700 nm.

11. (original) The light emitting device of claim 7, further comprising a reflective metal layer that is formed on said second reflector.

12. (withdrawn) The light emitting device of claim 3, further comprising a second omnidirectional reflector, and first and second glass substrates that sandwich said wavelength-converting member therebetween, said wavelength-converting member having opposite upper and lower surfaces and left and right side faces, said light-generating unit including a left row of light-generating elements that are inlaid in said left side face of said wavelength-converting member, and a right row of light-generating elements that are inlaid in said right side face of said wavelength-converting member, said second glass substrate being formed on said lower surface of said wavelength-converting member, said first glass substrate being formed on said upper surface of said wavelength-converting member, said first and second reflectors being respectively formed on said first and second glass substrates.

13. (withdrawn) The light emitting device of claim 12, wherein said second reflector includes at least one dielectric unit that has at least two dielectric layers which are different from each other in refractive index and layer thickness.

14. (withdrawn) The light emitting device of claim 13, further comprising left and right reflective metal layers that are formed on said left and right side faces of said wavelength-converting member and that respectively cover said left and right rows of said light-generating elements.

15. (withdrawn) The light emitting device of claim 3, wherein said wavelength-converting member has opposite upper and lower surfaces, said light emitting device further comprising a first glass substrate formed on said upper surface of said wavelength-converting member, said reflector being formed on said first glass substrate, said light-generating unit including a light-generating element that is imbedded in said lower surface of said wavelength-converting member.

16. (withdrawn) The light emitting device of claim 15, further comprising a second omnidirectional reflector and a reflective metal layer, said light-generating element having a lower surface, said second reflector being imbedded in said lower surface of said wavelength-converting member and having an upper surface that is formed on said lower surface of said light-generating element, and a lower surface that is opposite to said upper surface of said second reflector, said reflective metal layer being formed on said lower surface of said wavelength-converting member and covering said lower surface of said second reflector.

17. (withdrawn) The light emitting device of claim 16, further comprising a second glass substrate that is formed on said reflective metal layer.

18. (withdrawn) The light emitting device of claim 16, wherein said second reflector includes at least one dielectric unit that has at least two dielectric layers which

are different from each other in refractive index and layer thickness.

19. (withdrawn) The light emitting device of claim 15, further comprising a second omnidirectional reflector and a second glass substrate, said light-generating element having a lower surface, said second reflector being imbedded in said lower surface of said wavelength-converting member and having an upper surface that is formed on said lower surface of said light-generating element, and a lower surface that is opposite to said upper surface of said second reflector, said second glass substrate being formed on said lower surface of said wavelength-converting member and covering said lower surface of said second reflector.

20. (withdrawn)The light emitting device of claim 19, further comprising a reflective metal layer that is formed on and that covers said second glass substrate.

21. (withdrawn)The light emitting device of claim 19, wherein said second reflector includes at least one dielectric unit that has at least two dielectric layers which are different from each other in refractive index and layer thickness.

22. (withdrawn) An omnidirectional reflector comprising: a dielectric structure of an omnidirectional crystal with a spatially periodic variation in dielectric constant, said dielectric structure including at least one dielectric unit that has at least three dielectric layers which are different from each other in refractive index and in layer thickness in

such a manner that said reflector has a scattering characteristic that exhibits a reflectance characteristic that substantially permits total reflection of a primary light in a first wavelength range, and a transmittance characteristic that permits transmission of a secondary light in a second wavelength range outside the first wavelength range region.

23. (withdrawn) The reflector of claim 22, wherein said dielectric layers includes first, second and third dielectric layers, said second dielectric layer being sandwiched between said first and third dielectric layers and having a refractive index less than those of said first and third dielectric layers, said third dielectric layer having a refractive index less than that of said first dielectric layer.

24. (withdrawn) The reflector of claim 23, wherein said first high refractive index material is made from TiO_2, said second high refractive index layer being made from Ta_2O_5, said low refractive index layer being made from SiO_2.